

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/059333 A1

(51) International Patent Classification⁷: **F02D 9/06**

(21) International Application Number:
PCT/CA2004/002080

(22) International Filing Date: 6 December 2004 (06.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2,453,593 16 December 2003 (16.12.2003) CA

(71) Applicant (for all designated States except US): JENARA
ENTERPRISES LTD. [CA/CA]; 19594 - 96th Avenue,
Surrey, British Columbia V4N 4C3 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LHOTE, Andre, F.
[CA/CA]; 4992 Byrne Road, Burnaby, British Columbia

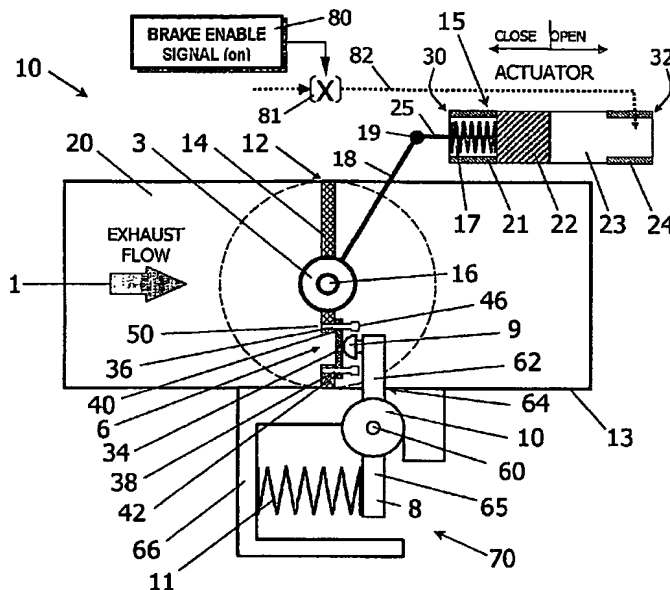
V5J 3H9 (CA). MENEELY, Vincent, A. [CA/CA]; 19596
96th Avenue, Surrey, British Columbia V4N 4C3 (CA).
GAVRIL, Gabriel [CA/CA]; 2009 Birch Grove, Burnaby,
British Columbia V5A 4A3 (CA). SPENCE, Tamara
[CA/CA]; 36192 Cassandra Drive, Abbotsford, British
Columbia V3G 2M6 (CA). HARTLEY, John, P. [US/US];
8894 Giles Road, Blaine, WA 98230 (US).

(74) Agent: CAMERON, Norman, M.; 1401 - 1166 Alberni
Street, Vancouver, British Columbia V6E 3Z3 (CA).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR PRESSURE RELIEF IN AN EXHAUST BRAKE



(57) Abstract: An exhaust brake has a body with a passageway for exhaust gases therein. A valve member is movably located within the passageway for selective movement between an open position where the valve member opens the passageway and exhaust gases are free to move through the passageway and a closed position where the valve member blocks the passageway and the passage of exhaust gases through the passageway. The valve member has an aperture therethrough to permit a limited flow of exhaust gases through the aperture when the aperture is open. An exhaust valve actuator mechanism is coupled to the valve member for moving the valve member between the open position and the closed position. A closure member is positioned adjacent to the aperture. The closure member has an open position where the closure member is spaced apart from the valve member and permits a flow of exhaust gases through the aperture and the closure member having a closed position where the closure member contacts the valve

member about the aperture and inhibits a flow of exhaust gases through the aperture. An actuator member operatively engages the closure member. There is a relief actuator mechanism, the relief actuator mechanism including an actuator member that operatively engages the closure member. The relief mechanism brings the closure member into operative engagement with the valve member with sufficient force, when the valve member is closed, to maintain the closure member in the closed position when the exhaust gases are below a predetermined pressure.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2004/002080

A. CLASSIFICATION OF SUBJECT MATTER

IPC[7]: F02D-9/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC[7]: F02D

USPC: 188/154

CPC: 123/7

Documentation searched other than minimum documentation to the extent that such documents are included in the fields

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms

Epodoc, Derwent, Patent Abstracts of Japan, CPD, Key Words: Engine, Exhaust, Jake, Brake, Relief, Bypass

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant	Relevant to claim No(s).
X	US 6,179,096 B1 (KINERSON, K. et al.) 30 January 2001 (30-01-2001) Page 5, Lines 13-34; Page 6, Lines 60-67; Page 7, Lines 1-64; Figures 1-6	1-8, 12-14, 16-30, 34-36, 38-52, 56-58 and 60-66
A	US 6,223,534 B1 (ERDMANN, W. et al.) 1 May 2001 (01-05-2001)	All
A	US 6,109,027 B1 (SCHAEFER, N.) 29 August 2000 (29-08-2000)	All
A	US 4,682,674 B1 (SCHMIDT, A.) 28 July 1987 (28-07-1987)	All
A	US 2003/0131894 A1 (HECKT, R. et al.) 17 July 2003 (17-07-2003)	All

[] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents:
 "A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier application or patent but published on or after the international filing date
 "L" document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
 "&" document member of the same patent family

Date of the actual completion of the international search

14 March 2008 (14-03-2005)

Date of mailing of the international search report

29 March 2005 (29-03-2005)

Name and mailing address of the ISA/CA
 Canadian Intellectual Property Office
 Place du Portage I, C114 - 1st Floor, Box PCT
 50 Victoria Street
 Gatineau, Quebec K1A 0C9

Facsimile No: 001(819)953-2476

Authorized officer

Zachary Rokosh (819) 956-0848

INTERNATIONAL SEARCH REPORT

International application No.

Information on patent family members

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
US6179098 B1	30-01-2001	WO9924732 A1	20-05-1999
US6223534 B1	01-05-2001	DE19836677 A1 FR2782344 A1 GB2340545 A	17-02-2000 18-02-2000 23-02-2000
US6109027 A	29-08-2000	WO9941495 A1	19-08-1999
US4882874 A	28-07-1987	AT31780T T DE3430028 A1 EP0175070 A1 ES545075D D0 JP1772574C C	15-01-1988 27-02-1988 26-03-1986 16-01-1986 14-07-1993
US2003131894 A1	17-07-2003	DE10159362 A1 FR2833089 A1 GB0215569D D0	18-06-2003 06-06-2003 14-08-2002